Chesapeake Bay Program
Science. Restoration. Partnership.

Planning Toolbox

MWEE

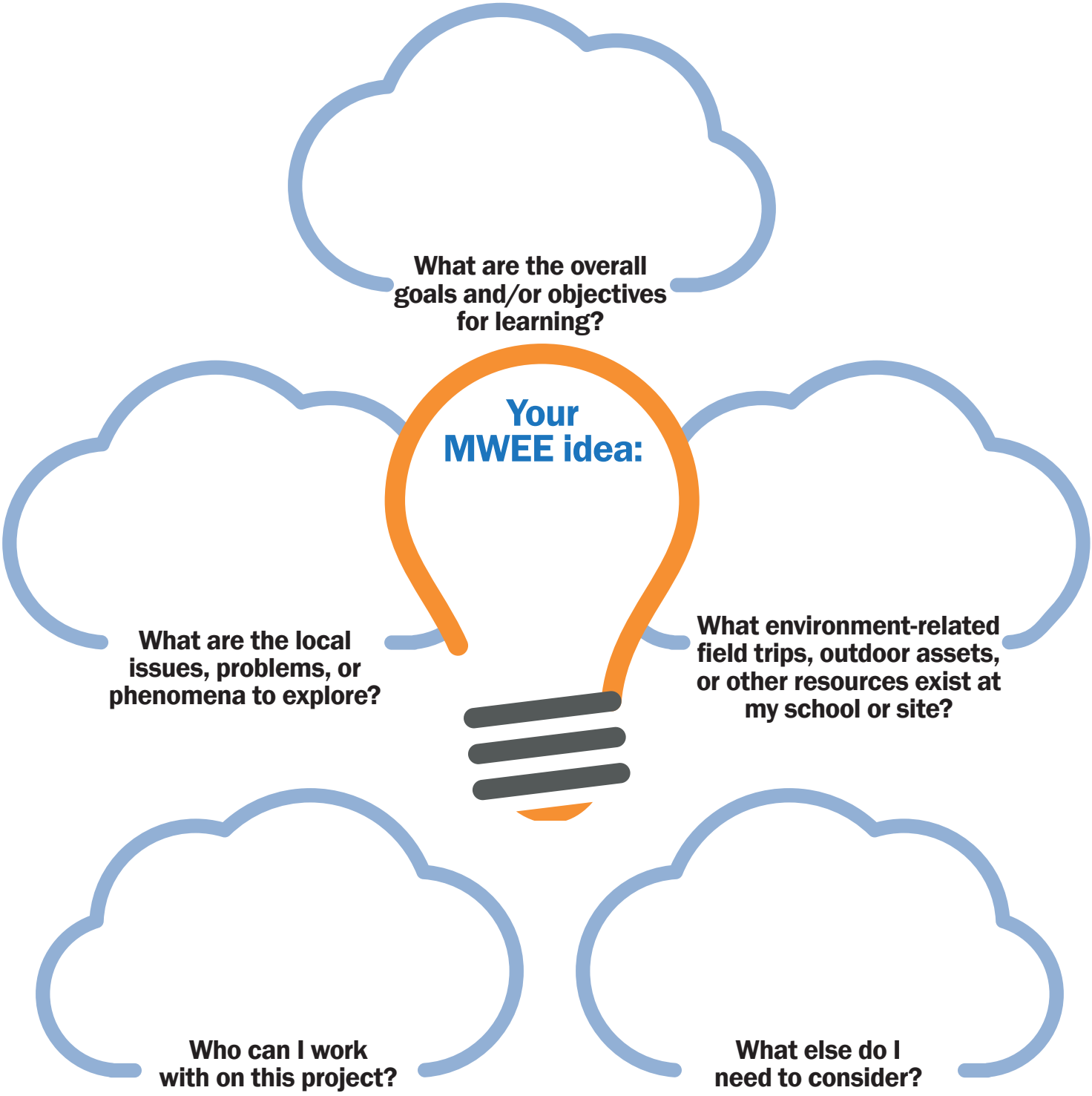
The Chesapeake Bay Watershed

A watershed is all of the land whose water and rainfall will eventually drain into a particular river, lake, bay, or other body of water.

The Chesapeake Bay watershed is 64,000 square miles and has 11,600 miles of tidal shoreline, including tidal wetlands and islands. The watershed encompasses parts of six states: Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia, as well as Washington D.C. Approximately 17 million people live in the watershed; about 10 million people live along its shores or near them.

MWEE Think Cloud

Use this MWEE Think Cloud to do some initial brainstorming about MWEE ideas and to facilitate conversation about your MWEE plans with partners and team members. The questions in the clouds are meant to support your thinking and are open to your interpretation about how to be used in this space.



Developing Driving and Supporting Questions

This tool will help connect the dots between the issue, problem, or phenomenon explored throughout the MWEE, the driving question, the supporting questions, and the standards. While the supporting questions are ideally created by your students, you'll likely have a good idea of what those could look like based on the investigations. For more information on creating effective driving questions, refer to the graphic on page 5.

MWEE Issue	Driving Question	Supporting Question	Standard(s)
		Supporting Question	**Standard(s)**
		Supporting Question	**Standard(s)**
		Supporting Question	**Standard(s)**
		Supporting Question	**Standard(s)**

Incorporating Outdoor Field Experiences

This tool can be used to evaluate potential sites for Outdoor Field Experiences, including exploring how these sites can support the Issue Definition and Stewardship and Civic Action essential elements.

How will field experiences be used to make observations, collect data, or otherwise help answer the driving/supporting questions?

How can field experiences be used to explore or implement solutions as part of an action project?

	Possible Site #1	Possible Site #2	Possible Site #3
Site location and description (school grounds, partner sites, local natural areas)			
What work do the field experiences do for your MWEE (learning objectives, science and engineering practices, etc.)?			
What will the teacher do to facilitate learning?			

If partners are engaged, what is their role?			
Logistical Considerations			
What natural features, facilities, and/or programs are available at the site?			
Cost (transportation, program fees, etc.)			
What permissions need to be secured?			

Moving from Claims to Informed Action

This tool will help you visualize different action options for addressing the driving question explored in your MWEE. For information on different types of action projects, refer to the graphic on page 6.

Make Your Claim

Conclusions from Investigations

	Solution #1	Solution #2	Solution #3
What action could be taken to address the environmental problem, issue, or phenomenon? See **Types of Action Projects** on page 6.			
How would this help to address the environmental problem, issue, or phenomenon?			
What resources would you need?			

Environmental Literacy Model

Title	
Author	
School, District	
Audience (grade, course)	

Curriculum Anchor

Defining the Learning Objectives and Curriculum Connection

Curriculum indicators, performance expectations, and/or student learning objectives.

Describing the Local Context

The life-relevant issue that will serve as the context for learning.

Identifying the Driving Question

A broad, open-ended, life-relevant question that is based on the standards/learning objectives. Guides inquiry for the investigation(s), prompts the development of actionable claims.

Environmental Literacy Model

Issue Investigation

Asking Questions, Defining Issues and Problems

Students define the issue, problem, or phenomenon to be investigated and develop supporting questions that are relevant for investigation.

Issue Investigation 1	Issue Investigation 2	Issue Investigation 3

Planning and Conducting Investigations

Students plan and conduct investigations and classroom activities (indoor and outdoor) that actively address students' supporting questions. Students collect data that will be used to inform actionable claims.

Issue Investigation 1	Issue Investigation 2	Issue Investigation 3

Environmental Literacy Model

Issue Investigation (con't.)

Analyzing and Interpreting Data

Students analyze data through graphs, models, and other methods to reveal patterns and relationships. Students synthesize and apply evidence from their investigations to draw conclusions that address the supporting questions.

Issue Investigation 1	Issue Investigation 2	Issue Investigation 3

Constructing and Communicating a Claim

Students draw on the conclusions from their investigations to make a claim about the driving question and communicate these evidence-based claims to internal and/or external audiences.

Issue Investigation 1	Issue Investigation 2	Issue Investigation 3

Environmental Literacy Model

Stewardship and Civic Action

Identifying Solutions

Students identify and explore solutions that directly address the problem, challenge, or opportunity reflected in their claim. Students use decisionmaking processes to identify the solution(s) to implement.

Designing a Plan and Taking Informed Action

Students design a plan for implementing solutions through informed action in their classrooms, schools, and/or communities. The plans should include criteria for determining the extent to which the action successfully addresses the problem, challenge, or opportunity reflected in the claim. Students implement their plans.

Evaluating Action

Students reflect on the action and determine the extent to which it successfully addresses the problem, challenge, or opportunity reflected in the claim. Students communicate their findings and share proposals for sustaining or extending the action.

Meaningful Watershed Educational Experience (MWEE) Audit

This tool is designed to help you and your team strengthen your planned or existing projects to meet the full definition of a MWEE including the essential elements (Issue Definition, Outdoor Field Experiences, Synthesis and Conclusions, Stewardship and Civic Action) and supporting practices (Classroom Integration, Active Teacher Suppot, Local Context, Sustained Activity).

Classroom Integration	Score
Evaluate the extent to which the MWEE is meaningfully integrated with the scope and sequence of the academic program and supports cross-disciplinary learning. Keep in mind that the MWEE is not meant to be something extra; rather, it is an educational approach that supports academic success and environmental stewardship.	
The learning objectives to be met by the MWEE are clearly defined for each grade participating. *(Score 0 if not present; Score 2 if present but unclear; Score 4 if present and clearly defined.)*	0 2 4
The MWEE clearly and explicitly supports the identified academic standards. *(Score 0 if standards are not identified; Score 3 if standards are identified but no evidence how MWEE addresses standards; Score 6 if standards are identified and some evidence how MWEE addresses standards; Score 9 if evidence that MWEE clearly and explicitly supports standards.)*	0 3 6 9
The MWEE supports learning in multiple disciplines. *(Score 0 if only in one discipline; Score 2 if in multiple disciplines.)*	0 2
Subtotal	____/15

CRITERIA

Less than or equal to 4: Your project needs to have a clearer connection with academic standards and/or learning objectives to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 5 and 10: There are elements of classroom integration, but it could be stronger with either (1) better support of the academic standards and/or learning objectives you defined or (2) better connect with other academic standards and/or learning objectives that may be more appropriately met through the MWEE. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 11: Congratulations! There are always areas for improvement, but your project strongly supports academic standards and learning objectives.

For help, check out the "Curriculum Anchor" section of the Environmental Literacy Model (ELM) in *An Educator's Guide to the MWEE*.

IDEAS TO STRENGTHEN CLASSROOM INTEGRATION

Issue Definition	Score
Evaluate the extent to which the MWEE supports student learning about a locally relevant environmental issue, problem, or phenomenon that the students can address through stewardship and civic action. Driving and supporting questions anchor learning about the issue, which is explored through classroom instruction, background research, reflection on values and perspectives, and investigation.	
The investigation of the chosen issue, problem, or phenomenon will logically culminate in stewardship and civic action. *(Score 0 if the answer is no or probably not; Score 2 if the answer is not sure; Score 4 if the answer is very likely or yes.)*	0 2 4
The driving question has the following characteristics (check all that apply): ❏ Supports learning objectives ❏ Helps initiate and focus the inquiry ❏ Relevant and related to everyday life ❏ Provides opportunities for stewardship and civic action ❏ Thought-provoking and intellectually engaging ❏ Open-ended (i.e., typically will not have a single, final, and correct answer) ❏ Promotes further inquiry (i.e., raises additional questions) ❏ Encompasses both natural and social systems and topics ❏ Requires students to revisit the problem frequently as knowledge and understanding evolve ❏ Calls for higher-order thinking, including analysis, inference, prediction, and evaluation *(Score 0 if zero or one box is checked; Score 2 if two to four are checked; Score 4 if five to seven are checked; Score 6 if eight or more are checked.)*	0 2 4 6
During the MWEE, students engage in background research in order to understand the issue and develop supporting questions for further investigation. *(Score 0 if no background research is required; Score 2 if some minimal teacher directed background research required; Score 4 for increasing level of student direction during the background research and development of supporting questions, Score 6 if substantial background research is required and students develop their own supporting questions for further inquiry.)*	0 2 4 6
During the MWEE, students reflect on personal and public values and perspectives. *(Score 0 if values and perspectives are not incorporated; Score 2 if personal and/or public values and perspectives are peripheral to the MWEE for students; Score 4 if personal and public values and perspectives are fully integrated into the MWEE.)*	0 2 4
Subtotal	____/20

CRITERIA

Less than or equal to 10: Your project needs to focus on a locally relevant environmental problem, issue, or phenomenon requiring background research, further inquiry and investigation to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 11 and 15: There are elements of issue definition but the identified issue and/or questions could be more comprehensive and complex. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 16: Congratulations! There are always areas for improvement, but your project is focused on a locally relevant environmental problem, issue, or phenomenon requiring background research, further inquiry and investigation.

For help, check out "Developing Driving & Supporting Questions" in the Toolbox of *An Educator's Guide to the MWEE.*

IDEAS TO STRENGTHEN ISSUE DEFINITION

Local Context	Score
Evaluate the extent to which the MWEE occurs within a local context (i.e., schoolyard, neighborhood, town, or community). The local context is important for establishing the life-relevancy of the problem, issue, or phenomenon being studied and enables students and teachers to explore how individual and collective decisions affect their immediate surroundings as well as the larger environment.	
The MWEE is centered on a local problem, issue, or phenomenon that is directly connected to the lives of the students. *(Score 0 if there is no local relevance; Score 1 if a local problem, issue, or phenomenon is addressed, but does not directly connect to the students' lives; Score 2 if a local problem, issue, or phenomenon is addressed and directly connects to the students' lives.)*	0 1 2
The MWEE provides opportunities to explore the impacts of locally relevant (i.e. schoolyard, neighborhood, town, or community) environmental issues. *(Score 0 if the students are not exploring their local schoolyard, neighborhood, or community; Score 1-2 if the students are exploring their local schoolyard, neighborhood, or community, but this is not directly (or peripherally) related to investigating the problem, issue, or phenomenon; Score 3 if the students are exploring their local schoolyard, neighborhood, or community and it is directly related to investigating the problem, issue, or phenomenon.)*	0 1 2 3
Subtotal	____/5

CRITERIA

Less than or equal to 3: Your project needs to occur within a local context to be a MWEE. Don't be discouraged, there are resources and tools to help!

Greater than or equal to 4: Congratulations! There are always areas for improvement, but overall your project is occurring within a local context.

For help, check out "Creating Outdoor Field Experiences" in the Toolbox of *An Educator's Guide to the MWEE*.

IDEAS TO STRENGTHEN LOCAL CONTEXT

Outdoor Field Experiences	Score
Evaluate student participation in outdoor field experiences that are aligned with the problem, issue, or phenomenon. Investigations and activities conducted during the outdoor field experience(s) address the driving and supporting questions as well as inform student action. To the extent possible students should be actively involved in planning the inquiry that occurs during the outdoor field experience(s). These experiences can take place off-site and on the school grounds.	
Students participate in one or more outdoor field experiences. *(Score 0 if students do not go outdoors; Score 3 if students have one outdoor field experience during the course of their MWEE; Score 6 if this occurs more than once.)*	0 3 6
The outdoor field experience(s) are aligned with the problem, issue, or phenomenon the students are studying. *(Score 0 if the field experiences are not aligned with the issue; Score 1 if the field experiences are indirectly aligned with the issue [not necessarily the purpose of the field experience but there is a connection]; Score 2 if the field experiences are related to the issue but are not an integral step to investigating the issue; Score 3 if the field experiences are directly aligned with the issue and necessary to investigating the issue.)*	0 1 2 3
Students are actively involved in planning the inquiry that occurs during the outdoor field experience(s). *(Score 0 if the students are not involved; Score 1-2 if teachers/partners plan outdoor field experiences with little input from students; Score 3 if students are actively involved in the planning including creating/co-creating supporting questions that inform outdoor field experiences.)*	0 1 2 3
Students explore the driving question and supporting questions during the outdoor field experience(s). *(Score 0 if the intent and activities of the field experience[s] are not related to exploring the driving and supporting questions; Score 2-4 if the intent and activities of the field experience[s] are somewhat, generally, or in large part related to exploring the driving and supporting questions; Score 6 if the outdoor experience is designed to purposefully explore the driving and supporting questions.)*	0 2 4 6
Subtotal	____/18

CRITERIA

Less than or equal to 11: Your project needs to include one or more outdoor field experiences sufficient to investigate the problem, issue, or phenomenon to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 12 and 14: There are outdoor field experiences but they could be more directly connected to investigating the issue and questions being studied and/or increased student involvement in planning the inquiry. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 15: Congratulations! There are always areas for improvement, but your project has one or more outdoor field experiences sufficient to investigate the problem, issue, or phenomenon.

For help, check out "Creating Outdoor Field Experiences" in the Toolbox of *An Educator's Guide to the MWEE.*

IDEAS TO STRENGTHEN OUTDOOR FIELD EXPERIENCES

Synthesis and Conclusions	Score
Evaluate the extent to which the MWEE supports students analyzing and interpreting their data to draw conclusions, make claims, and communicate about their investigation.	
Students have dedicated class time to analyze, interpret, and make conclusions based on their research, outdoor field experiences, and related data analysis. *(Score 0 if no time; Score 2 if students have one in-class opportunity to make conclusions; Score 4 if two opportunities; Score 6 if students regularly revisit their research throughout the MWEE to make conclusions.)*	0 2 4 6
Students communicate the results and conclusions of the investigation to inform and/or engage in scholarly argument with their peers or an audience. Note, this is different from communicating to build awareness about a MWEE experience, and Civic and Community Engagement types of action projects where students communicate to persuade an audience to take action. *(Score 0 if none; Score 1 if students communicate broadly about their MWEE experience, but do not present results of the investigation; Score 2 if students only present basic results of the investigation; Score 3 if students construct coherent explanations of the investigation using evidence and demonstrate their understanding of the issue, problem, and phenomenon.)*	0 1 2 3
Subtotal	____/9

CRITERIA

Less than or equal to 3: Your project needs to include synthesis, conclusions and communication of the claims drawn through the investigation of your issue and questions to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 4 and 7: There is some synthesis, conclusions and communication of your investigation but it can be more extensive. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 8: Congratulations! There are always areas for improvement, but your project has student-centered action projects that address conclusions and claims drawn through the investigation of your issue and questions.

For help, check out "Moving from Claims to Informed Action" in the Toolbox of *An Educator's Guide to the MWEE*.

IDEAS TO STRENGTHEN SYNTHESIS AND CONCLUSIONS

Stewardship and Civic Action	Score
Evaluate the extent to which students identify, explore, and implement solutions that address the conclusions and claims drawn through investigation and consider the effectiveness of these solutions.	
Students develop a claim based on their synthesis and conclusions that warrants informed action. *(Score 0 if no, Score 2 if yes.)*	0 2
Students identify and explore multiple solutions based on their claim and select an action to implement. *(Score 0 if students do not explore solutions; Score 1 if students do not explore multiple solutions; Score 3 if students explore multiple solutions, but action has been preselected by teacher; Score 4 if students explore multiple solutions and select action.)*	0 1 3 4
The selected action is directly aligned with the issue the students are studying. *(Score 0 if action is not connected to the issue; Score 2 if action is indirectly aligned to the issue; Score 4 if action is directly aligned to the issue.)*	0 2 4
Students plan and implement the selected action. *(Score 0 if the students are not involved at all; Score 2 if students are involved in implementation, but not it's design or if they plan a project but don't implement it; Score 5 if students are involved in both, but the teacher planned the details of the action; Score 8 if students are involved in both planning and implementing the action.)*	0 2 5 8
Students reflect on the action and explore how they can continue to affect change related to the issue. *(Score 0 if students do not reflect on the action; Score 1 if students reflect on the action; Score 2 if students reflect on the action and explore how they can continue to affect change.)*	0 1 2
Subtotal	____/20

CRITERIA

Less than or equal to 7: Your project needs to include stewardship and civic action that address conclusions and claims drawn through the investigation of your issue and questions to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 8 and 14: These are action projects but they could be more directly connected to investigating the issue and questions being studied and/or increased student involvement in planning and implementation. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 15: Congratulations! There are always areas for improvement, but your project has student-centered stewardship and civic action that address conclusions and claims drawn through the investigation of your issue and questions.

For help, check out the "Stewardship and Civic Action" section of the Environmental Literacy Model (ELM) in the Toolbox of *An Educator's Guide to the MWEE*.

IDEAS TO STRENGTHEN STEWARDSHIP AND CIVIC ACTION

Active Teacher Support	Score
Evaluate the extent to which the MWEE supports teacher facilitation and ongoing student learning. Teachers ensure that the essential elements of the MWEE come together to support academic goals for learning while creating opportunities for students to take active roles in that learning process.	
Classroom teacher facilitates student investigation of the driving and supporting questions during *issue definition*. *(Score 0 if the teacher is not involved at all; Score 1 if the teacher is involved but mostly facilitated by an partner; Score 2 if teacher facilitated or cofacilitated with partner.)*	0 1 2
Classroom teacher facilitates student investigations of the supporting questions during *outdoor field experiences*. *(Score 0 if the teacher is not involved at all; Score 1 if the teacher is involved but mostly facilitated by partners; Score 2 if teacher facilitated or cofacilitated with partner)*	0 1 2
Classroom teacher facilitates the students' selection, design, and implementation of *stewardship and civic action*. *(Score 0 if the teacher is not involved at all; Score 1 if the teacher is involved but mostly facilitated by partners; Score 2 if teacher facilitated or cofacilitated with partner)*	0 1 2
Level of classroom teacher's role in the *synthesis and conclusions*. *(Score 0 if the teacher is not involved at all; Score 1 if somewhat involved; Score 2 if actively involved.)*	0 1 2
Subtotal	____/8

CRITERIA

Less than or equal to 2: Your project needs to include more teacher facilitation and ongoing support of student learning to be a MWEE. Don't be discouraged, there are resources and tools to help!

Between 3 and 4: There is some teacher facilitation and ongoing support of student learning but it could be more extensive. Review the sections where you did not score highly and see what you might be able to do to earn more points.

Greater than or equal to 5: Congratulations! There are always areas for improvement, but your project has active teacher facilitation and ongoing support of student learning.

For help, check out the Environmental Literacy Model (ELM) in the Toolbox of *An Educator's Guide to the MWEE* and look for opportunities where the classroom teacher can engage.

IDEAS TO STRENGTHEN STEWARDSHIP AND CIVIC ACTION

Sustained Activity	Score
Evaluate the extent to which the MWEE is a sustained activity that engages students from beginning to end and includes a variety of rich and connected learning opportunities spread over the course of a unit or multiple units. Experiences such as tours, gallery visits, simulations, demonstrations, and nature walks may be instructionally useful, but alone do not constitute a MWEE.	
The MWEE includes a variety of rich and connected learning opportunities that occur over time. *(Score 0 if the MWEE is completed in one day; Score 1 if the MWEE consists of an outdoor field experience with short pre- and post-classroom activities; Score 3 if the MWEE is integrated throughout a single unit of instruction that takes place at the school or provider sites; Score 5 points if the MWEE is an integrated series of units that occur over a semester or year.)*	0 1 3 5
Subtotal	____/5
CRITERIA **Less than or equal to 1:** Your project needs to be a sustained activity that engages students from beginning to end to be a MWEE. Don't be discouraged, there are resources and tools to help! **Greater than or equal to 3:** Congratulations! There are always areas for improvement, but your project is a sustained activity that engages students from beginning to end. **For help, check out the Environmental Literacy Model (ELM) in the Toolbox of *An Educator's Guide to the MWEE* to help plan a variety of rich and connected learning opportunities.**	
IDEAS TO STRENGTHEN SUSTAINED ACTIVITY	
TOTAL	_____/100

For your project to be a MWEE it must incorporate all of the essential elements (issue definition, outdoor field experiences, action project, synthesis and conclusions) and supporting practices (classroom integration, local context, active teacher support, sustained activity) at some level. To determine if your project is a MWEE please follow the criteria below.

IF YOUR TOTAL SCORE IS:

Between 90 and 100—Grade A: Congratulations! There are always areas for improvement but overall you are running a strong MWEE.

Between 80 and 89—Grade B: Your project is meeting the full definition of a MWEE. However your MWEE could be stronger. Review the sections where you did not score highly and see what you might be able to do to earn points.

Between 70 and 79—Grade C: Your project is most likely incorporating all of the components of a MWEE. However your MWEE could be much stronger. Review the sections where you did not score highly, especially if it is an essential element section, and see what you might be able to do to earn points.

Between 60 and 69—Grade D: Your project does not contain enough components to be a MWEE. Don't be discouraged though, there are resources and tools to help! Review the sections where you did not score highly and see what you might be able to do to earn points.

Below 60: Your project is missing the essential elements necessary to meet the full definition of a MWEE. Review the sections where you did not score highly and see what you might be able to do to earn points.

More information to build or strengthen a MWEE can be found at baybackpack.com, including *An Educator's Guide to the MWEE* and an online course.

Spotlighting Your MWEE: Tips and Tools for Highlighting Your MWEE to the Media

We want more people to know about your MWEE! Sharing information about your work with the media is a great way to amplify your work—and to build support for MWEEs in general. We know that you are educators, not "PR people," so we offer this information to get you started.

Getting Information to Reporters

- There are several ways to go about getting "the word" out to media—newspapers, TV/radio stations, bloggers, etc. You may wish to contact a certain reporter at one media outlet, or you may want to send out a more general press release to let several media outlets in your area know about your program. Either way has its benefits!
- Reporters often like to get "exclusives," where they are the only media outlet covering a story. This method—usually generated by contacting a specific reporter—will generally get you deeper coverage. These "exclusives" can often be generated by a simple phone call or email to a local reporter, introducing them to your MWEE and inviting them to join you and your students to learn more.
- Days in the field are very attractive to reporters!
- Sending out a press release may mean that your content is included in more media outlets—but coverage may not be very deep. In fact, many smaller media outlets—especially online versions of newspapers and blogs—are so strapped for resources and reporters, they often will run your press release verbatim, with no additional reporting involved.

Press Release Tips

- Keep it short and sweet—your goal is to entice readers to call you for more information. Many organizations strive to keep their press releases to one side of a piece of paper; this is a good rule of thumb but not a requirement.
- Many newspapers, especially in smaller markets, have shrinking resources and fewer reporters than in years past. They may just print your press release verbatim—be sure to include your most important "messages."
- Quotes are a great way to share information and convey buy-in from others. Because space is limited, be sure any quotes cover content you want to have in the press release.
- Be sure to include good contact information—phone and email is best, and make sure it's to someone who can give a reporter more meaty information about your MWEE (probably to you, rather than your school principal).
- Headlines are important! Use action words to highlight what you are trying to convey ("NOAA B-WET-funded Project Helps 500 Students Experience Watershed"). In addition to generating interest, this kind of headline tends to make what you want to share very clear.
- People are eager to learn more...especially if it's easy. Include links to websites/social media on your MWEE, if available.

The creators of this guide are committed to embedding environmental literacy into schools throughout the Chesapeake Bay region. The authors would like to acknowledge the following people for their contributions to the guide:

Donna Balado (Maryland State Department of Education)

David Bauman (Pennsylvania Department of Education)

Jaime Belanger (Sassafras Environmental Education Center)

Hemalatha Bhaskaran (James M. Bennett High School, Wicomico County Public Schools)

Josh Cartwright (South River High School, Anne Arundel County Public Schools)

Laura Collard (Maryland Association for Environmental and Outdoor Education)

Kayla David (Alice Ferguson Foundation)

Jennifer Dindinger (Maryland Sea Grant)

Deborah George (Caroline County Public Schools)

Page Hutchinson (Virginia Department of Forestry)

Emily Leedy (Alice Ferguson Foundation)

Beth Novick (Kenmoor Middle School, Prince George's County Public Schools)

Aleeza Oshry (Howard Hughes Medical Institute)

Melanie Parker (Anne Arundel County Public Schools)

Anne Petersen (Virginia Department of Education)

JoAnn Roberts (Maryland State Department of Education—Retired)

Amanda Rockler (Maryland Sea Grant)

Frank Rodgers (Cacapon Institute)

Sonia Saunders (Brandywine Springs School, Delaware)

Dusty Shockley (Delaware Department of Education)

Britt Slattery (Maryland Department of Natural Resources)

Donna Stotts (NOAA Environmental Science Training Center)

Nicole Sturgill (Aspira Academy, Delaware)

Elaine Tholen (Fairfax County Public Schools)

Carolyn Thomas (West Virginia Science Teachers Association)

Jonathan Wickert (Delaware Department of Natural Resources and Environmental Control)

Cover Photo: Students from the National Cathedral School in Washington, D.C., investigate underwater grasses at Fox Island Education Center.
CHESAPEAKE BAY FOUNDATION

Art Direction/Graphic Design:
Lise Holliker Dykes
Kim Couranz